

REMARKS

The Office Action dated August 11, 2005 has been received and carefully noted. The above amendments to the specification and claims, and the following remarks, are submitted as a full and complete response thereto.

The Applicant wishes to thank the Examiner for indicating allowable subject matter in claims 4-7 and 11-15.

In accordance with the foregoing, claims 1 and 17 have been amended to improve clarity of the features recited therein. No new matter is being presented, and approval and entry are respectfully requested. As will be discussed below, it is also requested that all of claims 1-3, 8-10, and 16-18 be found allowable as reciting patentable subject matter.

Claims 1-18 stand rejected and pending and under consideration.

REJECTION UNDER 35 U.S.C. § 112:

In the Office Action, at page 2, claims 1, 8, 10, and 16 are rejected under 35 U.S.C. § 112, first paragraph, for failure to comply with the enablement requirement. According to the Office Action, it is unclear from the specification of the present invention which “first amplifier” is intended and it is unclear how the second output signal controls the gain of the “first amplifier.” This rejection is traversed and reconsideration is requested.

There are several portions of the specification in which the “first amplifier” is described and illustrated. For instance, on page 4, paragraph [0014] of the specification, it is described that the representative circuit illustrated in Figure 1 is configured to control the gain of an amplifier outside the circuit. For example, using the circuit illustrated in Figure 1, the gain of low-noise amplifier (LNA) 110 may be controlled. Paragraph [0020] further describes the second portion 105 producing a second output signal that may be used to control the gain of LNA 110 and/or other outside amplifiers that may be operably connected, either directly or indirectly, to second portion 105. Thus, in some circumstances, the first amplifier and the second amplifier may be the LNA 110, in other circumstances, the first amplifier may be the LNA 110 and the second amplifier may be other outside amplifiers.

Furthermore, page 6, paragraphs [0022] to [0024] describe an exemplary embodiment of how the gain of an outside amplifier (“a first amplifier”) would be controlled based on the input signal received at the input port 120 and/or input port 125. The description provides how these signals are processed and compared to adjust the gain of the outside amplifier, either from high to low or from low to high, depending on what kind of threshold value has been reached. In addition, Figure 2A and corresponding description illustrates how a circuit such as, for example, the circuit illustrated in Figure 1, may convert the values of the signals received through first input port 120 and second input port 125 into an inverse logarithmic function of these received signals.

Accordingly, it is respectfully asserted that the specification does describe and illustrate the “first amplifier” as recited in the claims. Also, it is respectfully asserted that the specification describes how the gain of the first amplifier is controlled.

Accordingly, it is respectfully requested that the § 112, first paragraph rejections to the claims be withdrawn.

Referring to claim 8, according to the Office Action, the specification fails to support the claimed “bias circuits.” This contention is respectfully traversed. For instance, paragraph [0034] of the specification provides that in order to stabilize the circuit illustrated in Figure 1 over temperature, the biasing circuits, illustrated in first portion 100 as combinations of amplifiers and rectifiers are cascaded. Paragraph [0016] of the specification describes that the first portion 100 is commonly referred to as the analog portion of the circuit illustrated in Figure 1 and typically includes several internal amplifiers and rectifiers. In the embodiment of the analog portion illustrated in Figure 1, three amplifiers 130, 135, 140 and five rectifiers 145, 150, 155, 160, 165 are operably connected to each other, to input ports 120, 125, and to output port 175 in the circuit. In addition, Figure 1 illustrates the configuration of the amplifiers and rectifiers providing a biasing circuit. Accordingly, it is respectfully asserted that the specification does describe and illustrate the “biasing circuit” as recited in the claims.

Referring to claim 8, according to the Office Action, the specification fails to support the claimed “cascaded mirror devices.” This contention is respectfully traversed. For instance, paragraph [0039] of the specification provides that according to step 550,

further stability may be provided by providing cascaded mirror devices in the bias-reference circuit to reduce current fluctuation of the second output signal. The arrangement illustrated of the bias-reference circuit in the first portion 100 including several internal amplifiers 130, 135, and 140 and rectifiers 145, 155, and 160 illustrate a cascaded mirror arrangement. In other words, the combination of the amplifiers and rectifiers as a bias-reference circuit is arranged as a cascaded mirror device. Accordingly, it is respectfully asserted that the specification does describe and illustrate the “cascaded mirror devices” as recited in the claims.

In the Office Action, at page 3, claim 17 is rejected under 35 U.S.C. § 112, second paragraph, for indefiniteness.

In response, the claim has been amended to improve clarity and antecedent support.

Accordingly, it is respectfully requested that the § 112, second paragraph rejections to the claims be withdrawn.

REJECTION UNDER 35 U.S.C. § 102:

In the Office Action, at page 3, claims 1-3, 10, 17, and 18 were rejected under 35 U.S.C. § 102 as being anticipated by U.S. Patent 6,484,042 by Loke (“Loke”). The Office Action took the position that Loke teaches and suggests all the recitations of claims 1-3, 10, 17, and 18. This rejection is traversed and reconsideration is requested.

Independent claim 1, upon which claims 2-3 are dependent, recites a circuit for controlling gain of a first amplifier. The circuit includes a first portion for receiving a first input signal and a second input signal from a second amplifier, and to produce a first output signal that is an inverse logarithmic function of a combination of the first input signal and the second input signal; and a second portion for digitally processing the first output signal and to produce a second output signal that controls the gain of the first amplifier.

Independent claim 10, upon which claim 17 is dependent, recites a method of controlling gain of a first amplifier. The method includes receiving a first input signal and a second input signal from a second amplifier in a first portion of a circuit; producing a first output signal in the first portion that is an inverse logarithmic function of a combination of the first input signal and the second input signal; forwarding the first output signal to a second portion of the circuit; digitally processing the first output signal in the second portion to produce a second output signal; and controlling the gain of the first amplifier using the second output signal.

Independent claim 18, recites a circuit configured to control gain of an amplifier. The circuit includes receiving means for receiving a first input signal and a second input signal from the amplifier; first production means for producing a first output signal that is an inverse logarithmic function of a combination of the first input signal and the second input signal; processing means for digitally processing the first output signal; and second

production means for producing a second output signal that controls the gain of the amplifier.

As will be discussed below, Loke fails to disclose or suggest the elements of any of the presently pending claims.

Loke generally describes a communication device in which a detector 56 (58) is configured to detect an envelope (signal level) of the signal component I (Q). See column 8, lines 37-66. Such an envelope detector may include a diode and a network of a resistor and a capacitor (RC network). In one embodiment, the detector signal is a voltage having a value that is proportional to the signal level of the signal component I (Q). However, Loke fails to teach or suggest all the recitations of independent claim 1. For instance, Loke fails to teach or suggest, at least, “a first portion for receiving a first input signal and a second input signal from a second amplifier, and to produce a first output signal that is an inverse logarithmic function of a combination of the first input signal and the second input signal,” as recited in independent claim 1.

Although Loke proceeds to indicate that those skilled in the art will appreciate that a more complicated envelope detector may be used and that instead of a voltage a current can be used as the detector signal, it is respectfully indicated that a person of ordinary skill in the art would not have arrived to a circuit in which a first output signal is an inverse logarithmic function of a combination of the first input signal and the second input signal in view of the description provided in Loke.

Specifically, according to Loke, the difference amplifier 52 (54) compares the detector signal to the reference signal and generates the error signal ΔI (ΔQ) that is indicative of the difference between the detector signal and the reference signal. The difference corresponds to a direct current (DC) offset of the signal component I (Q) with respect to the reference signal. The summing amplifier 48 (50) uses the error signal ΔI (ΔQ) and the signal RSSI to adjust the gain of the amplifier 44 (46) to either increase or decrease the signal level of the signal component I (Q). However, nothing in Loke teaches or suggests that the detector signal, the reference signal, and/or the error signal ΔI (ΔQ) is an inverse logarithmic function. Instead, Loke provides that the control signal to adjust the gain of the amplifier 44(46) is only a function of the error signal ΔI (ΔQ) and a function of the signal RSSI. The signal RSSI, according to Loke, corresponds to the signal strength (amplitude) of the received radio signal. However, Loke does not provide that the signal RSSI is an inverse logarithmic function of a combination of a first input signal and a second input signal.

Independent claim 10 recites, at least “producing a first output signal in the first portion that is an inverse logarithmic function of a combination of the first input signal and the second input signal,” and independent claim 18 recites, at least, “first production means for producing a first output signal that is an inverse logarithmic function of a combination of the first input signal and the second input signal.” Because independent claims 10 and 18 include similar claim features as those recited in independent claim 1, although of different scope, and because the Office Action refers to similar portions of

the cited references to reject independent claims 10 and 18, the arguments presented above supporting the patentability of independent claims 10 and 18 are incorporated herein to support the patentability of independent claim 1.

Accordingly, in view of the foregoing, it is respectfully requested that independent claims 1, 10, and 18 and related dependent claims be allowed.

REJECTION UNDER 35 U.S.C. § 103:

In the Office Action, at page 4, claim 9 was rejected under 35 U.S.C. § 103 as being unpatentable over Loke. The Office Action took the position that Loke discloses the claimed invention except the first output is connected to VDD. The rejection is traversed and reconsideration is requested.

As will be discussed below, Loke fails to disclose or suggest the elements of claim 9.

Dependent claim 9 depends from independent claim 1 and recites the additional features of “wherein the first output is operably connected to VDD.” Because Loke must teach all the recitations of the base claim and any intervening claims of dependent claim 9 the arguments presented above supporting the patentability of independent claim 1 over Loke are incorporated herein.

In addition, according to the Office Action, “it would have been obvious to one having ordinary skill in the art at the time the invention was made to have provided a

voltage supply to the circuit of Loke.” However, "Rejection of patent application for obviousness under 35 USC §103 must be based on evidence comprehended by language of that section, and search for and analysis of prior art includes evidence relevant to finding of whether there is teaching, motivation, or suggestion to select and combine references relied on as evidence of obviousness; factual inquiry whether to combine references must be thorough and searching, based on objective evidence of record." In re Lee, 61 USPQ2d 1430 (CA FC 2002). The factual inquiry must be based on objective evidence of record, and cannot be based on subjective belief and unknown authority. Id. at 1433-34. In addition, the mere fact that the prior art may be modified in the manner suggested by the Examiner does not make the modification obvious unless the prior art suggested the desirability of the modification.

Thus, the record must support motivation, i.e., there must be something in the record pointing out where the recited motivation can be found. In addition, there must be some discussion on how that purported motivation or suggestion is even relevant to the reference being modified. Accordingly, it is respectfully requested that evidence be presented showing how the description of Loke would motivate a person of ordinary skill in the art to modify the device described therein to also provide that “the first output is operably connected to VDD,” as recited in independent claim 9.

It is respectfully requested that independent claim 1 and related dependent claim 9 be allowed.

CONCLUSION:

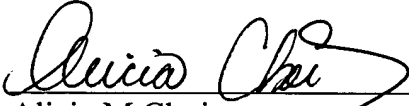
In view of the above, Applicant respectfully submits that the claimed invention recites subject matter which is neither disclosed nor suggested in the cited prior art. Applicant further submits that the subject matter is more than sufficient to render the claimed invention unobvious to a person of skill in the art. Applicant therefore respectfully requests that each of claims 1-3, 8-10, and 16-18 be found allowable and, along with allowed claims 4-7 and 11-15, this application passed to issue.

If for any reason the Examiner determines that the application is not now in condition for allowance, it is respectfully requested that the Examiner contact, by telephone, the applicant's undersigned attorney at the indicated telephone number to arrange for an interview to expedite the disposition of this application.

In the event this paper is not being timely filed, the Applicant respectfully petitions for an appropriate extension of time.

Any fees for such an extension together with any additional fees may be charged to Counsel's Deposit Account 50-2222.

Respectfully submitted,


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